

# NASA SBIR/STTR Technologies

S3.05-8263 - In-situ Airborne Sampler for Advanced Guided Dropsonde



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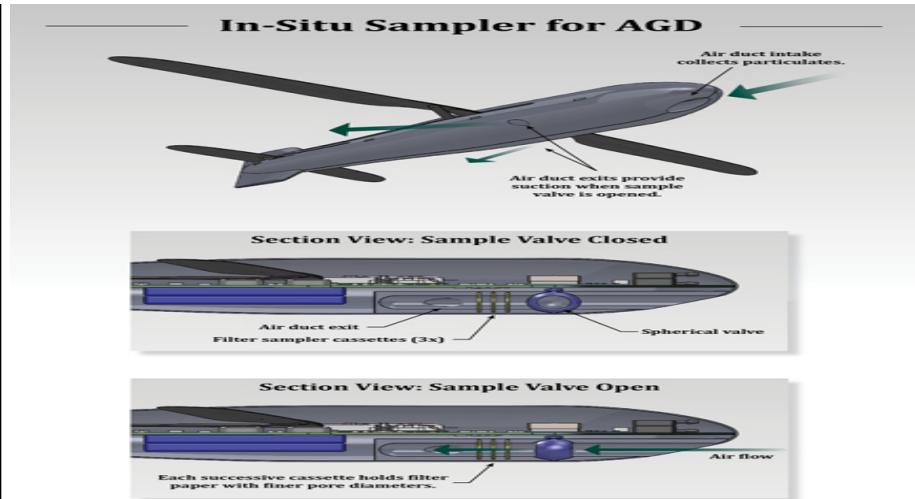
## Identification and Significance of Innovation

The key goals of this Phase I proposal are to demonstrate the capability of the AGD to be released from a host manned aircraft, collect an atmospheric particulate sample from a pre-programmed altitude and location, and deliver the protected sample to a pre-programmed recovery area. This system, engineered to be cost compatible with existing dropsonde launch systems, is recoverable and re-useable.

Estimated TRL at beginning and end of contract: ( Begin: 5 End: 7 )

## Technical Objectives and Work Plan

The primary technical objective of this effort is the development of an in-situ atmospheric sampler for Latitude Engineering's Advanced Guided Dropsonde (AGD). This will be a challenging engineering feat due to the very tight space and weight constraints of the AGD. The secondary technical objective will be refinement of the AGD platform, including aerodynamic improvements to tighten up flight control. The main flight issue encountered with the prototype AGD was the need for a larger vertical stabilizer. An articulating deployable vertical stabilizer will be designed as part of this effort.



## NASA Applications

Latitude's AGD was designed to fit the MIST dropsonde system used on NASA's Global Hawk UAV. It can be upsized or modified to be compatible with the AVAPS system on use on NASA's P-3, DC-8 or other aircraft.

The airborne in-situ sampler has many applications for other UAV platforms. Potential markets include Earth sciences, military, and disaster response agencies. The proposed sampler will greatly aid NASA in their efforts to further advance climate and atmospheric research.

## Non-NASA Applications

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**NON-PROPRIETARY DATA**